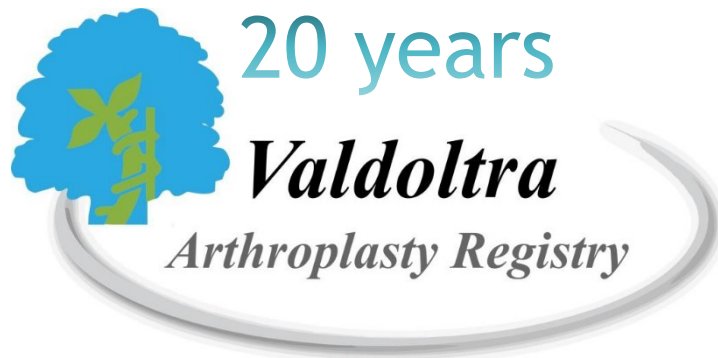




VALDOLTRA HIP ARTHROPLASTY REGISTRY REPORT 2002-2021

Dr. Vesna Levašič, MD

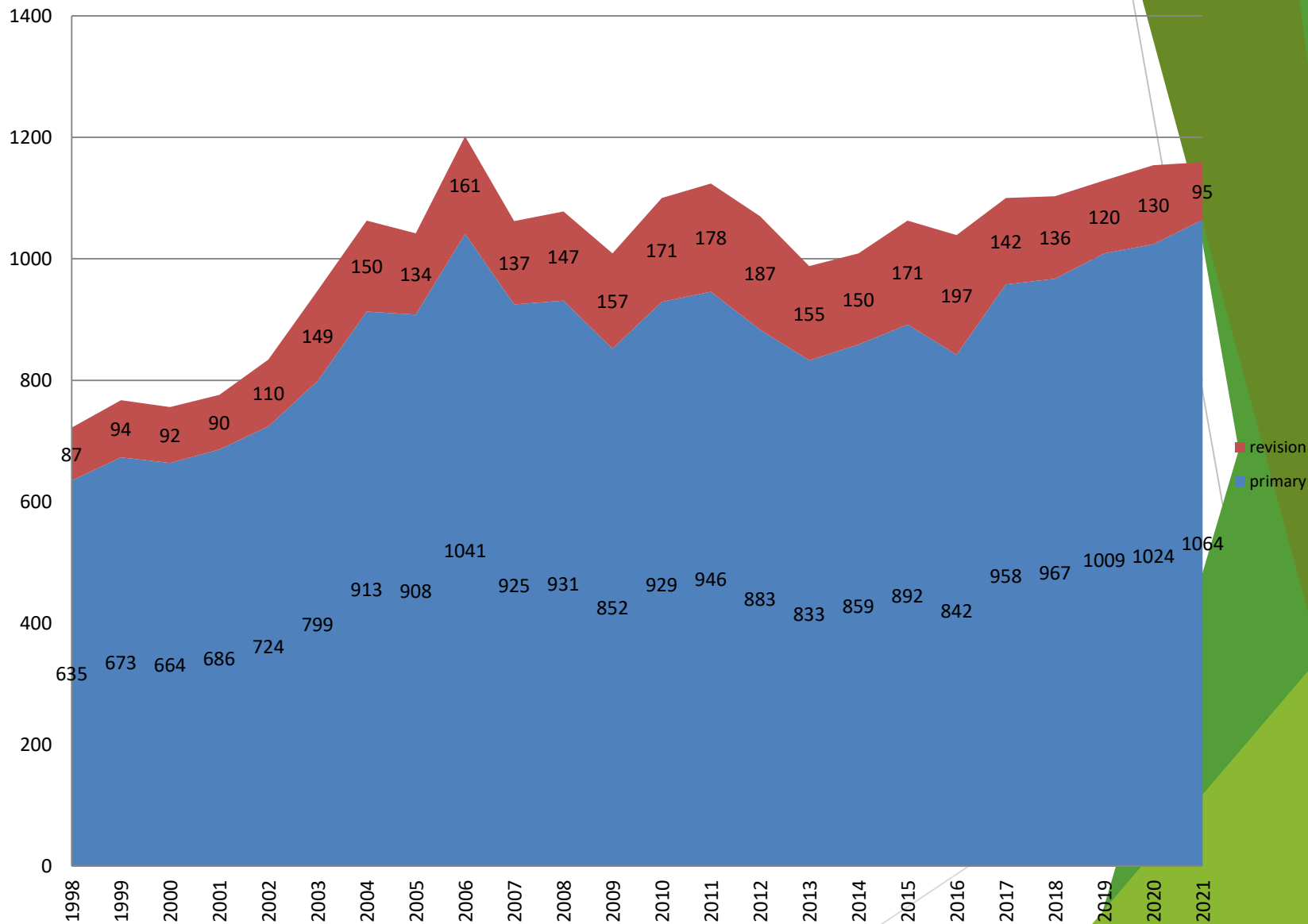
Denia Savarin

Ass. prof. dr. Simon Kovač, MD

Prof. dr. Ingrid Milošev

november 2022

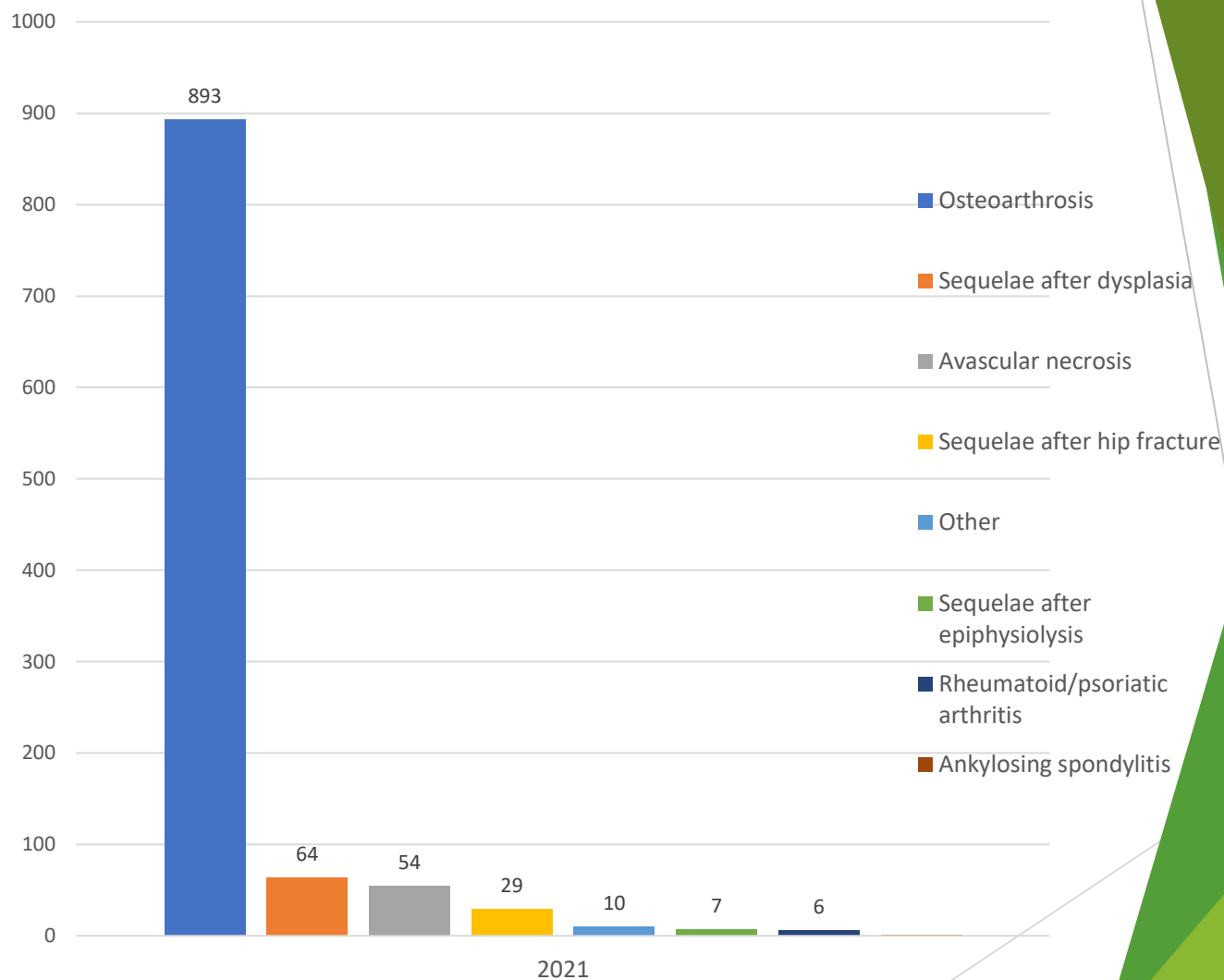
Primary and revision THR by year



Patient data for primary THR 2021

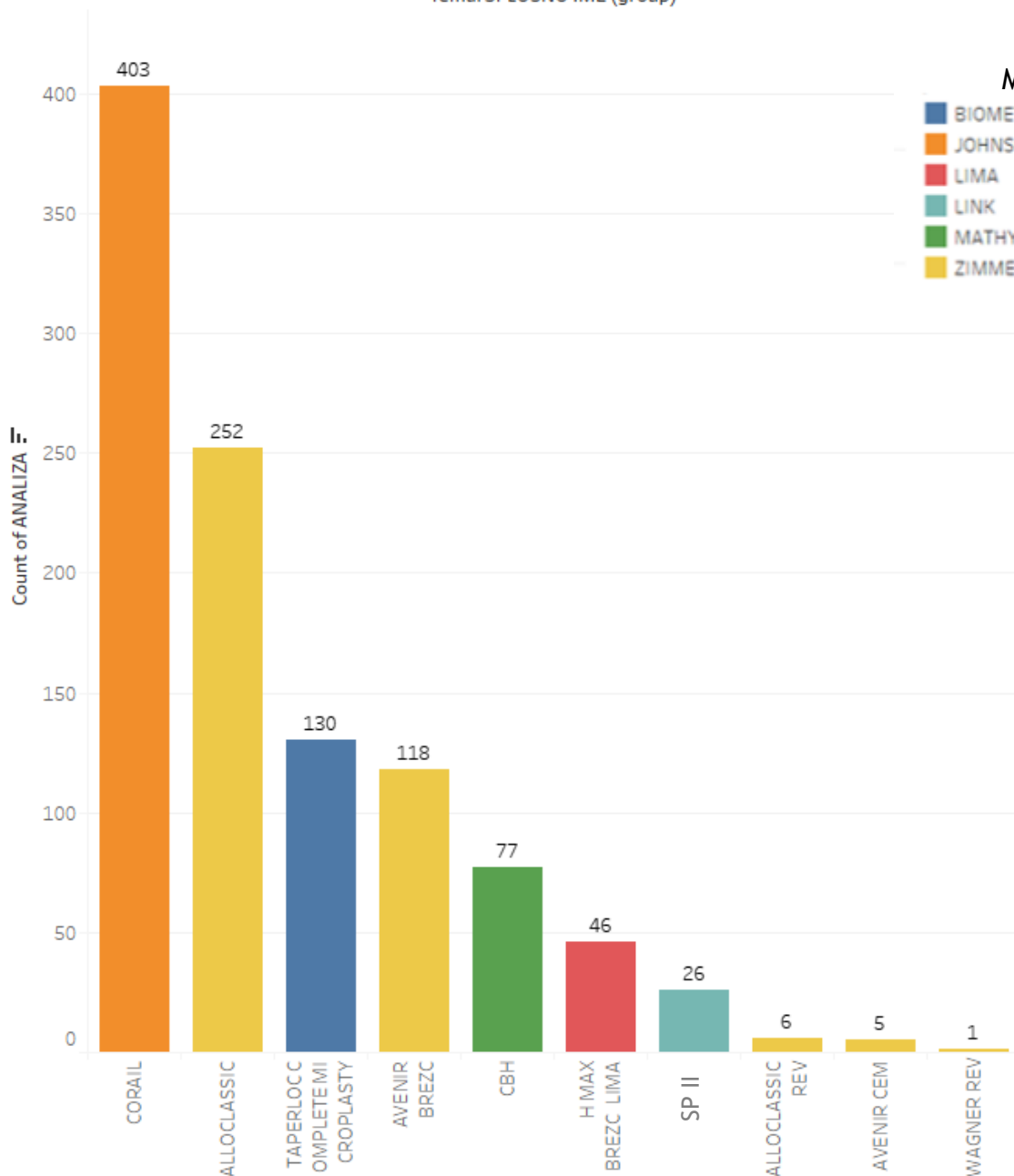
- Men - Women = 48% to 52%
- Average age = 65 y men and 68 y women
- Right - left = 53% to 47%
- Average preoperative Harris Hip Score = 62 ± 14 points
- 81 % overweight and obese ($ITM \geq 25$)
- Approach: 60 % anterior, 37 % direkt lateral and 3 % anterolateral
- Average duration of operation 64 ± 16 min
- Systemic antibiotic prophylaxis at all operations

Preoperative diagnosis for primary THR in 2021

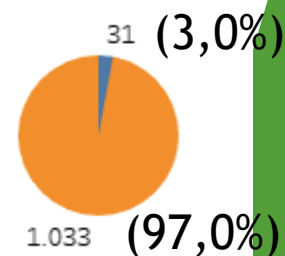


PRIMARY STEMS in 2021, sum 1064

femurSPLOŠNO IME (group)



Manufacturer:

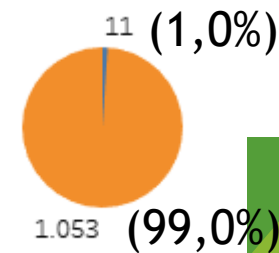
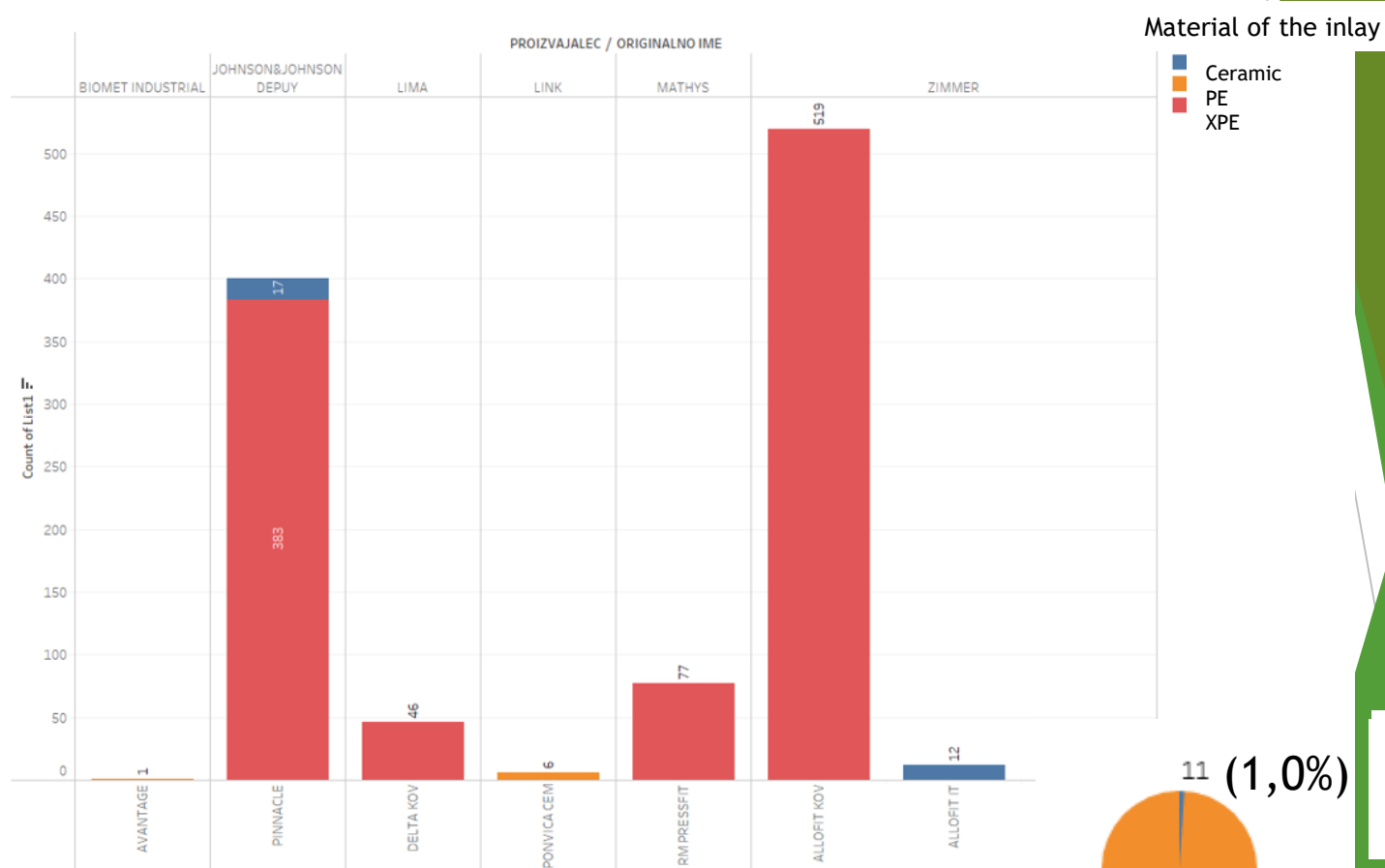


cemented
uncemented



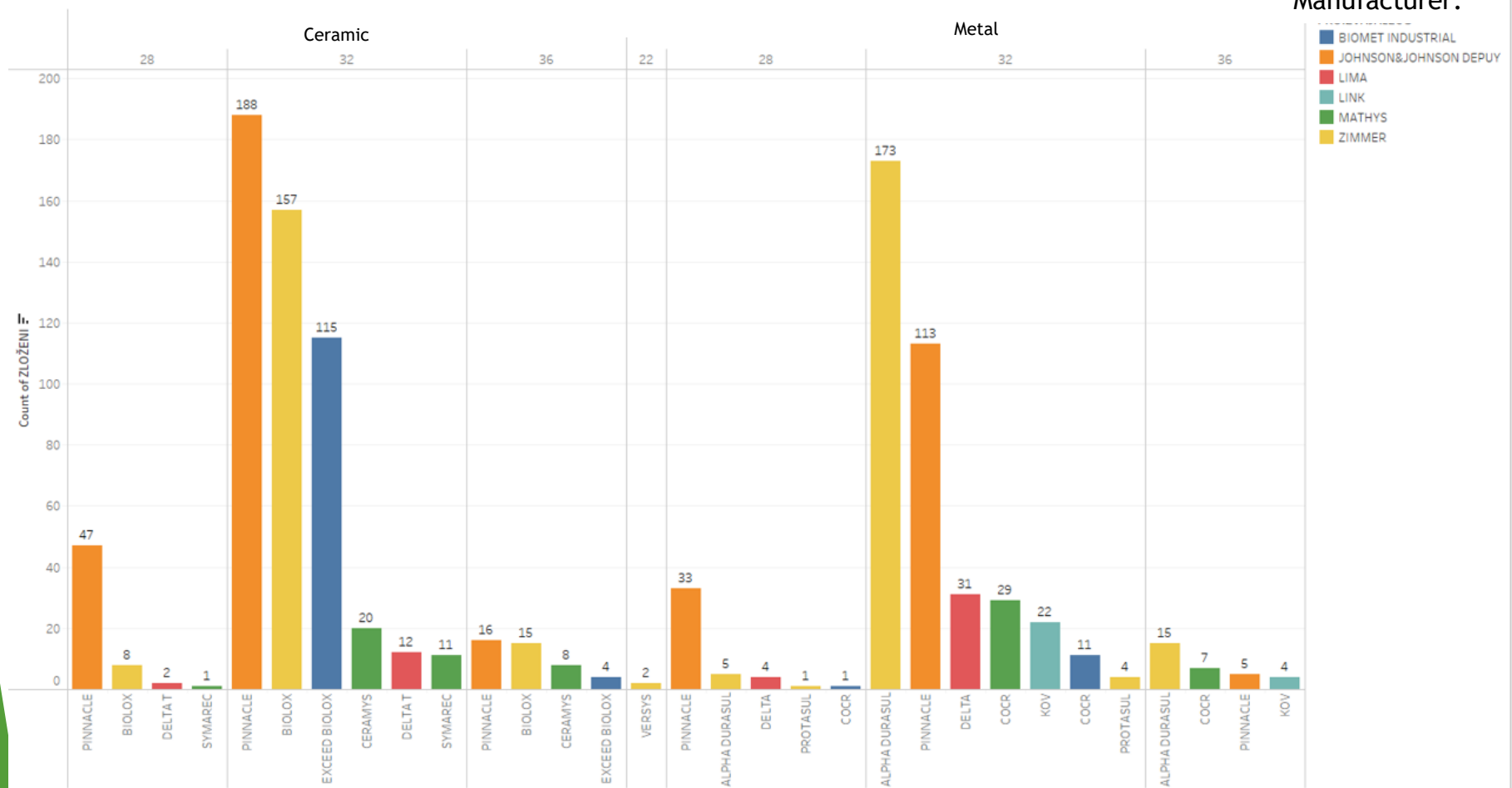
Register artroplastike
Valdoltra

PRIMARY ACETABULAR COMPONENTS in 2021 by manufacturer, sum 1064

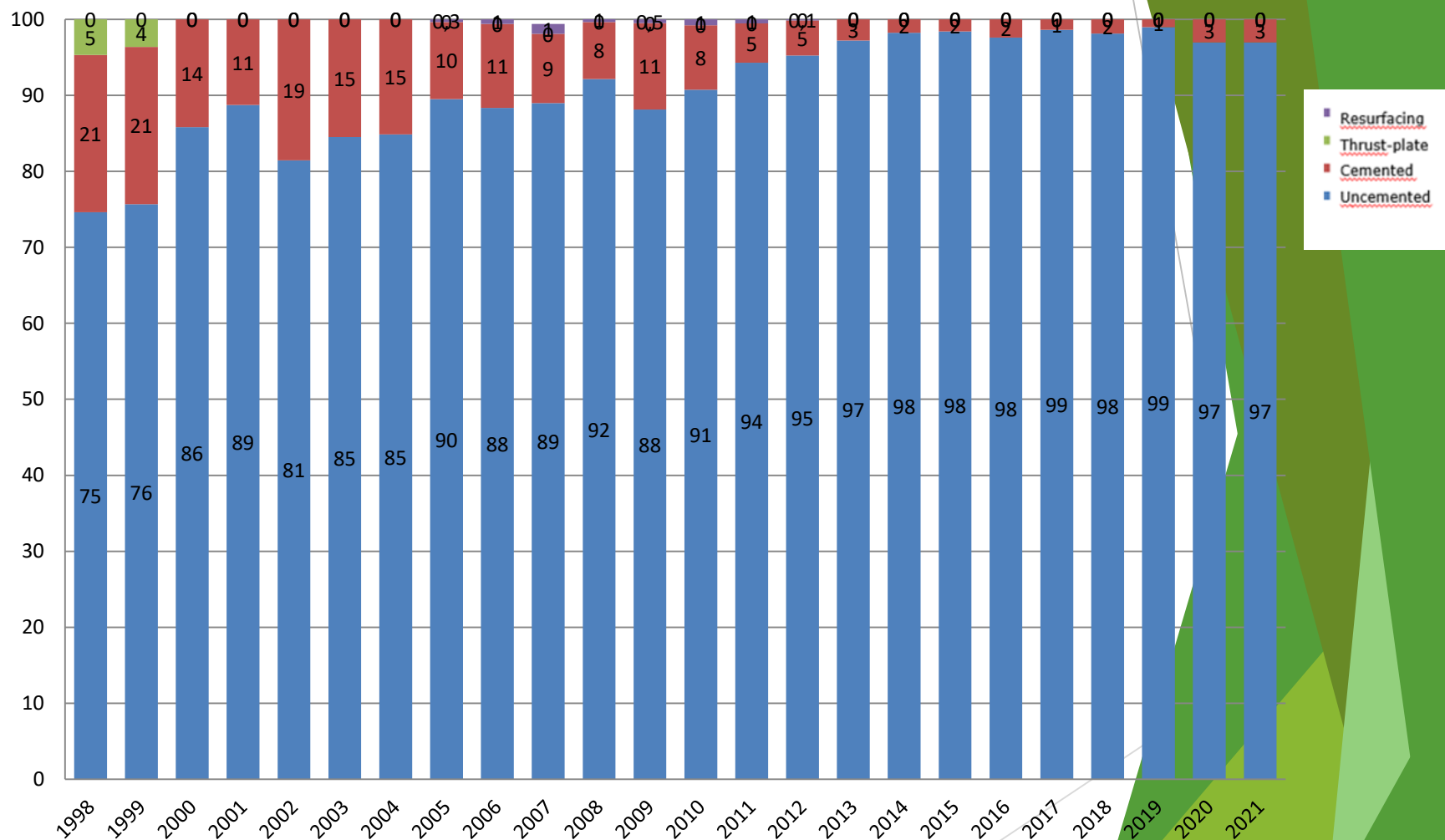


Register artroplastike
Valdoltra

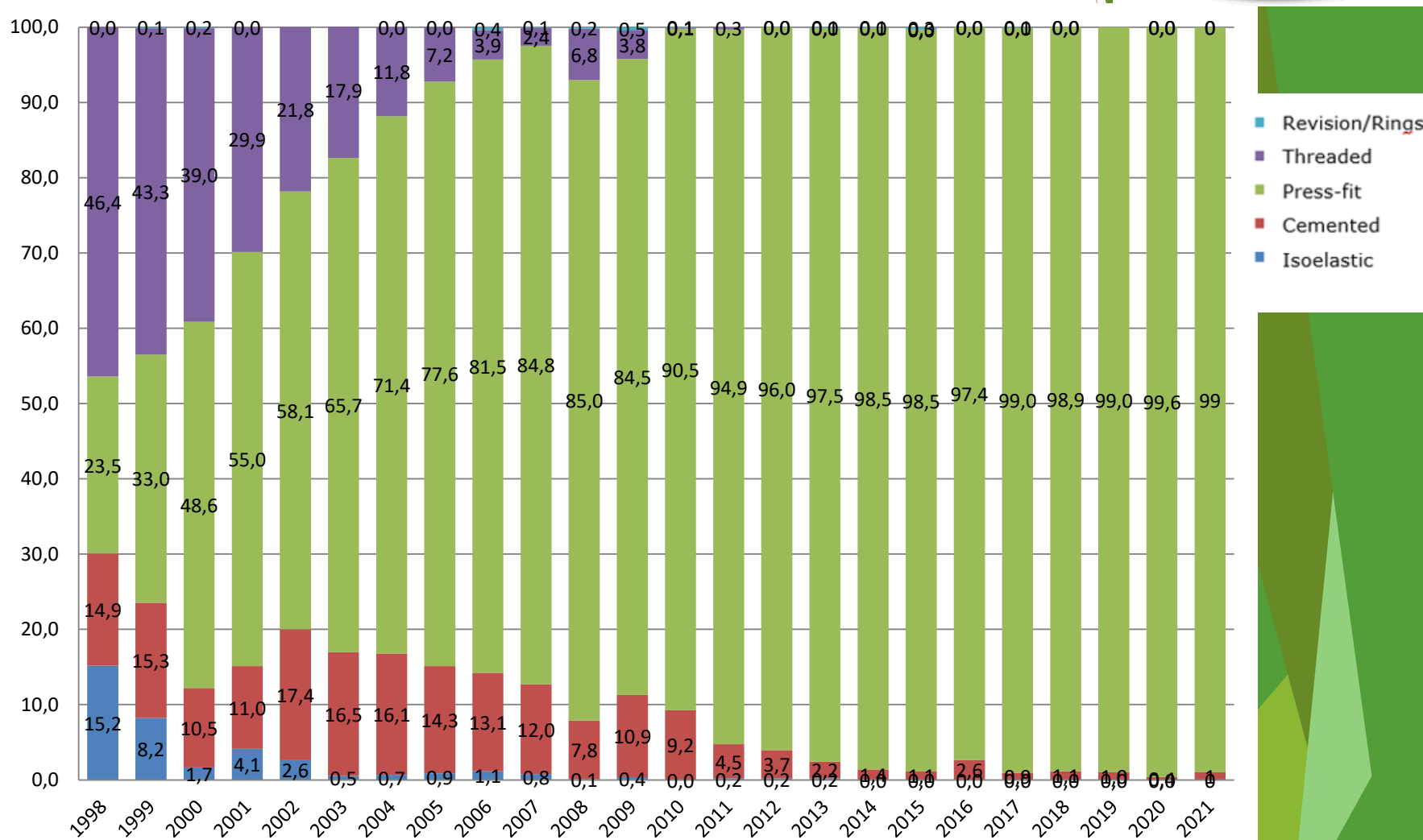
PRIMARY HEADS in 2021, sum 1064



Cemented, uncemented stems, trust-plate and resurfacing prostheses 1998 - 2021

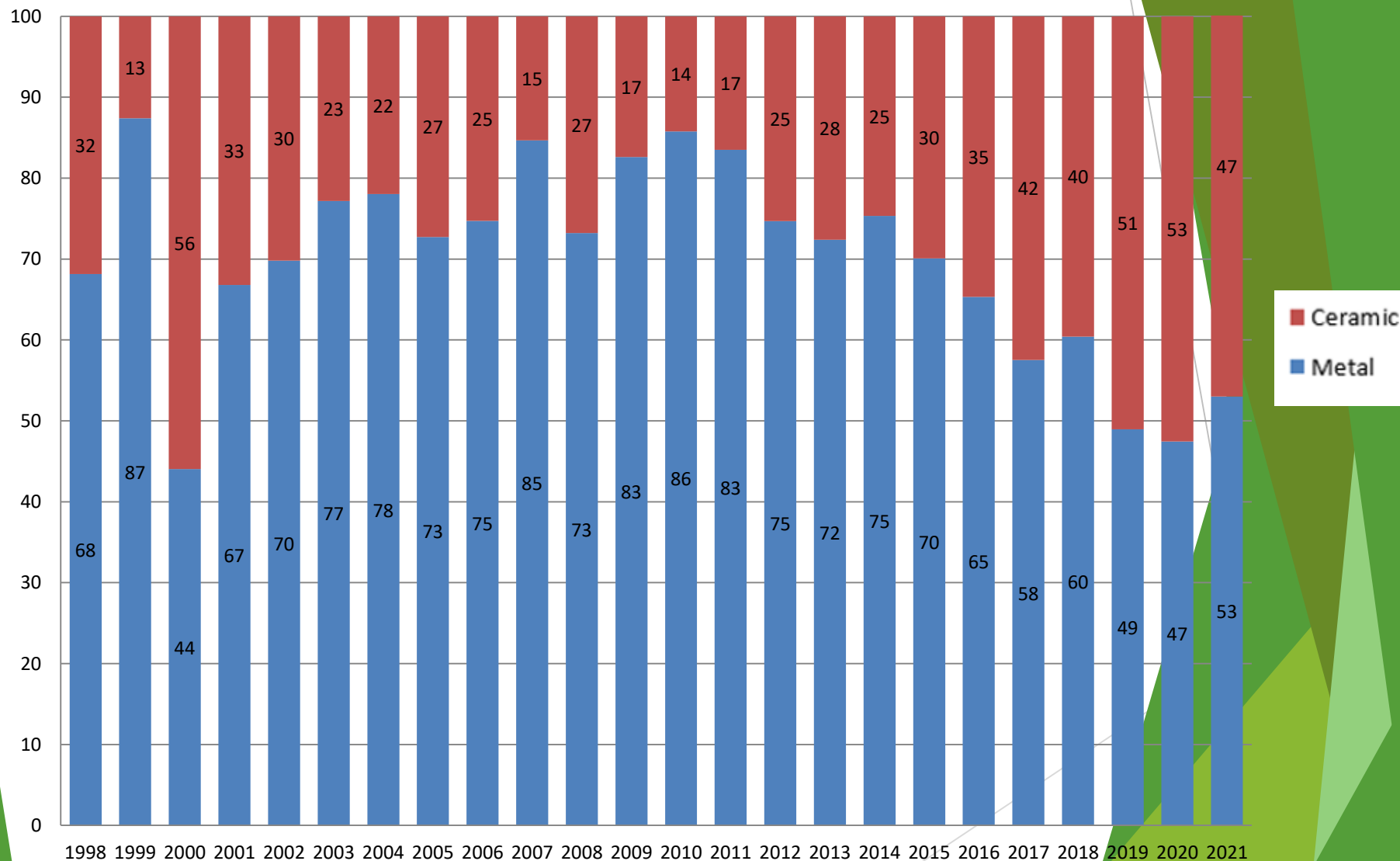


Primary cups by fixation 1998 - 2021

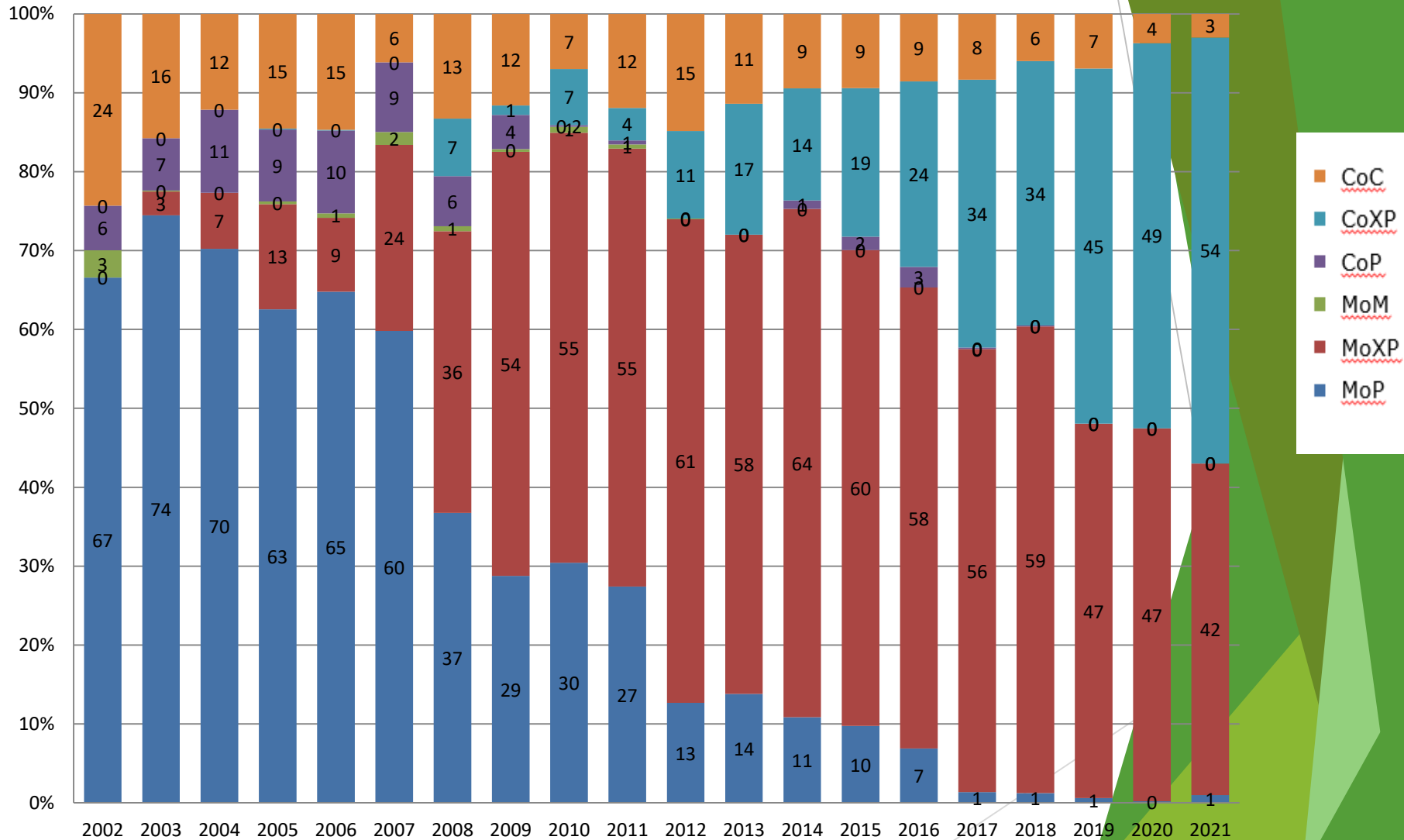


Percentage of metal and ceramic heads

1998 - 2021



Bearing surface 2002 - 2021



REVISION OPERATIONS IN 2021

95 revision THRs at 87 patients

(6 patients revised 2x in this year, 1 patient revised 3x in this year)

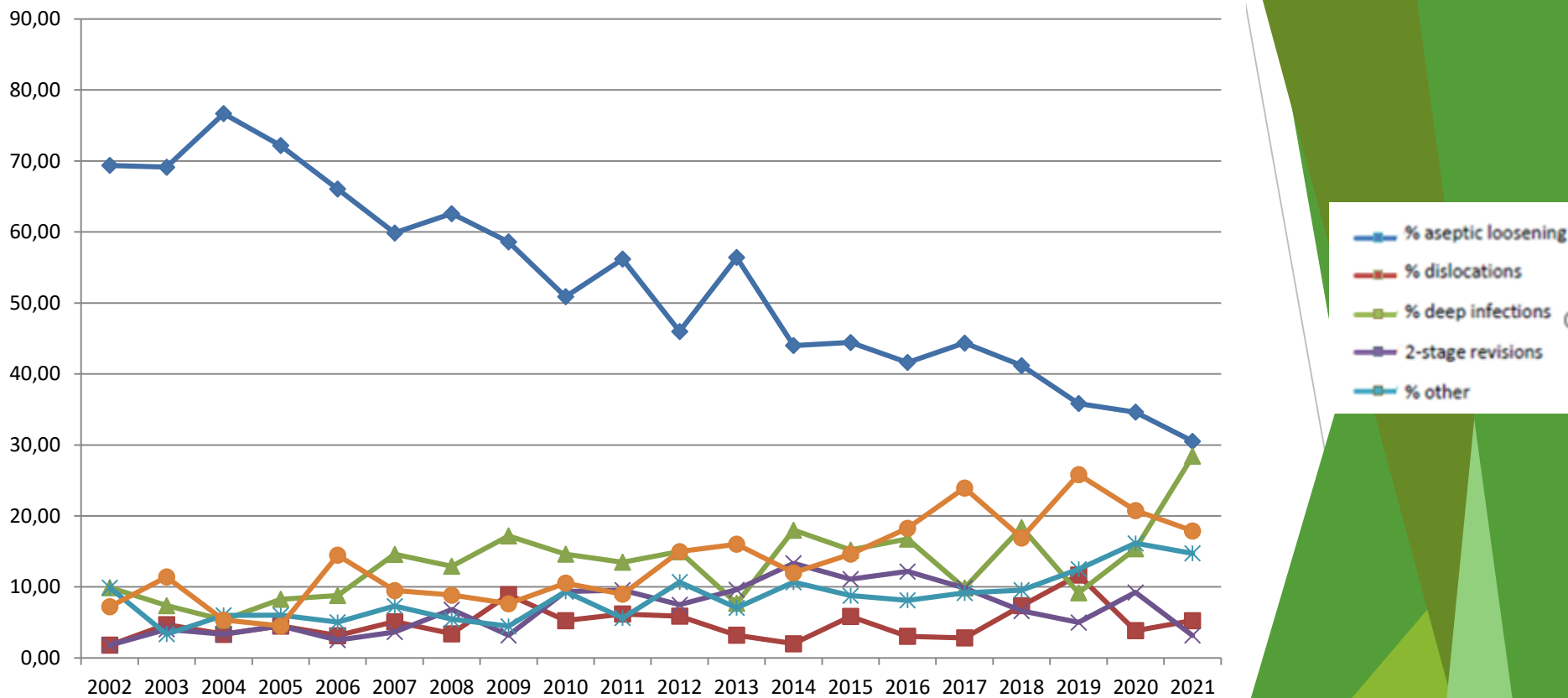
Patient data for revisions 2021

- Men - Women = 41% to 59%
- Average age = 69 y men and 72 y women
- Right - left = 56% to 44%
- Average preoperative Harris Hip Score = 57 ± 16 points
- 76 % overweight or obese ($BMI \geq 25$)
- Approach in 89 % direct lateral, v 5 % anterior, v 2 % anterolateral, 2 % posterolateral.
- Average duration of operation 130 ± 46 min

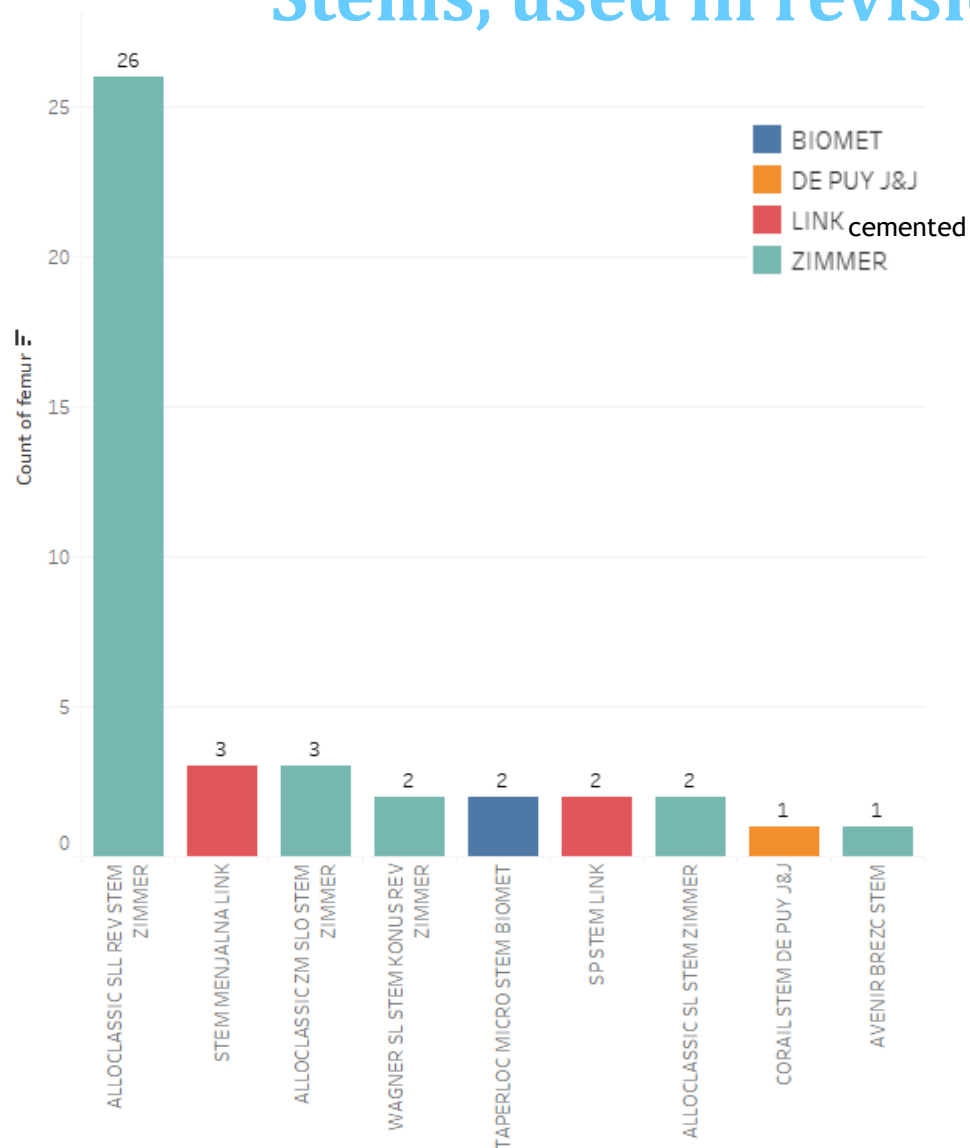
Reasons for revisions hips vs. knees 2002 - 2021

2002 - 2021	Hips (%)	Knees (%)
Aseptic loosening	53,0	20,7
Deep infection	13,3	25,1
Periprosthetic fracture	8,5	2,9
2-stage revision	6,8	13,4
Other	5,6	6,4
Dislocation	4,9	1,5
Implant broken	3,0	0,9
Osteolysis	2,3	0,0
Pain	2,3	8,0
Methalosis	0,3	0,0
Instability, malalignment, poor ROM	0,0	14,2
OA of the other compartment	0,0	6,8

Reasons for revision THRs from 2002 - 2021

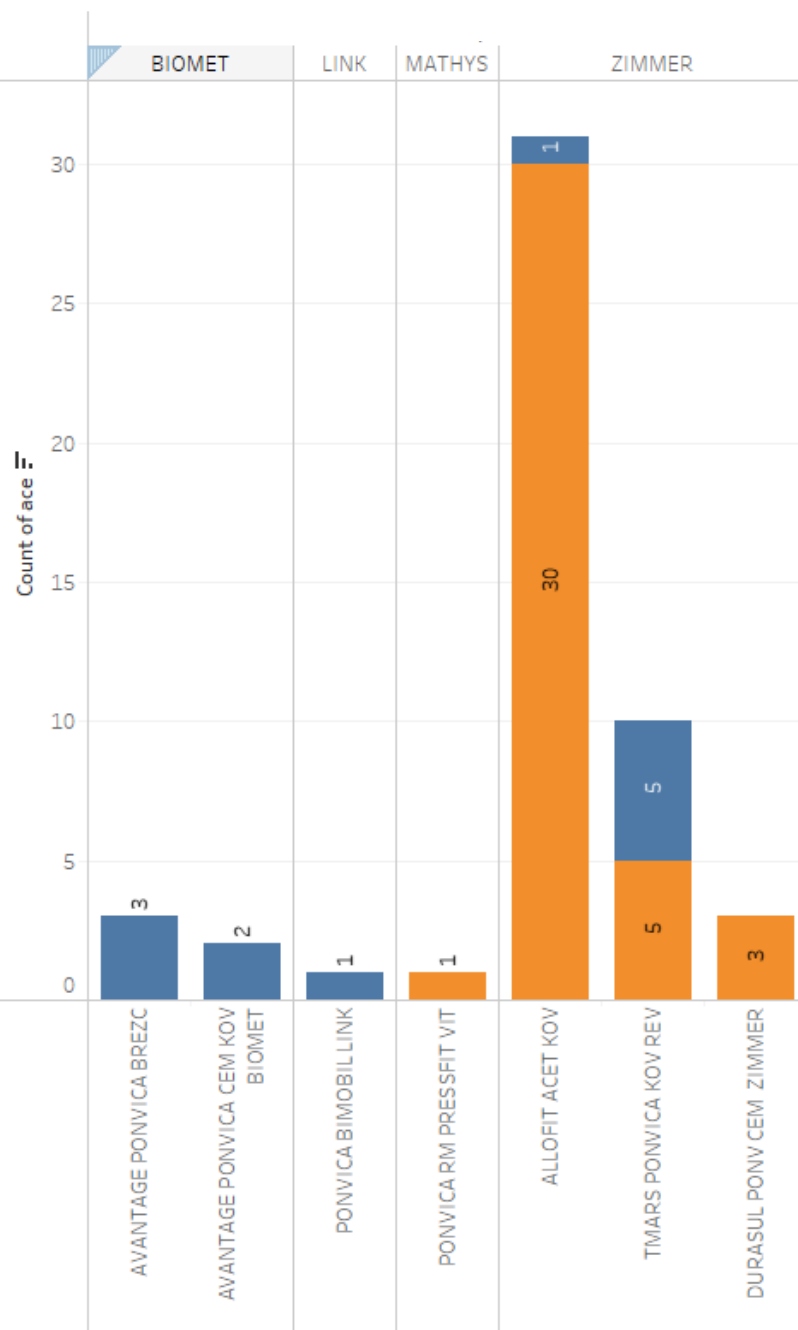


Stems, used in revisions 2021, sum 43

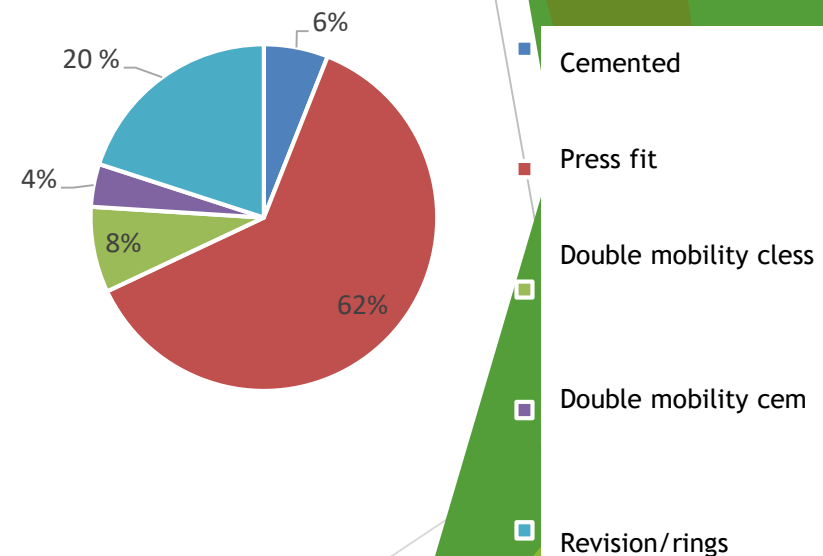


Register artroplastike
Valdoltra

Cups, used at revisions 2021, sum 51



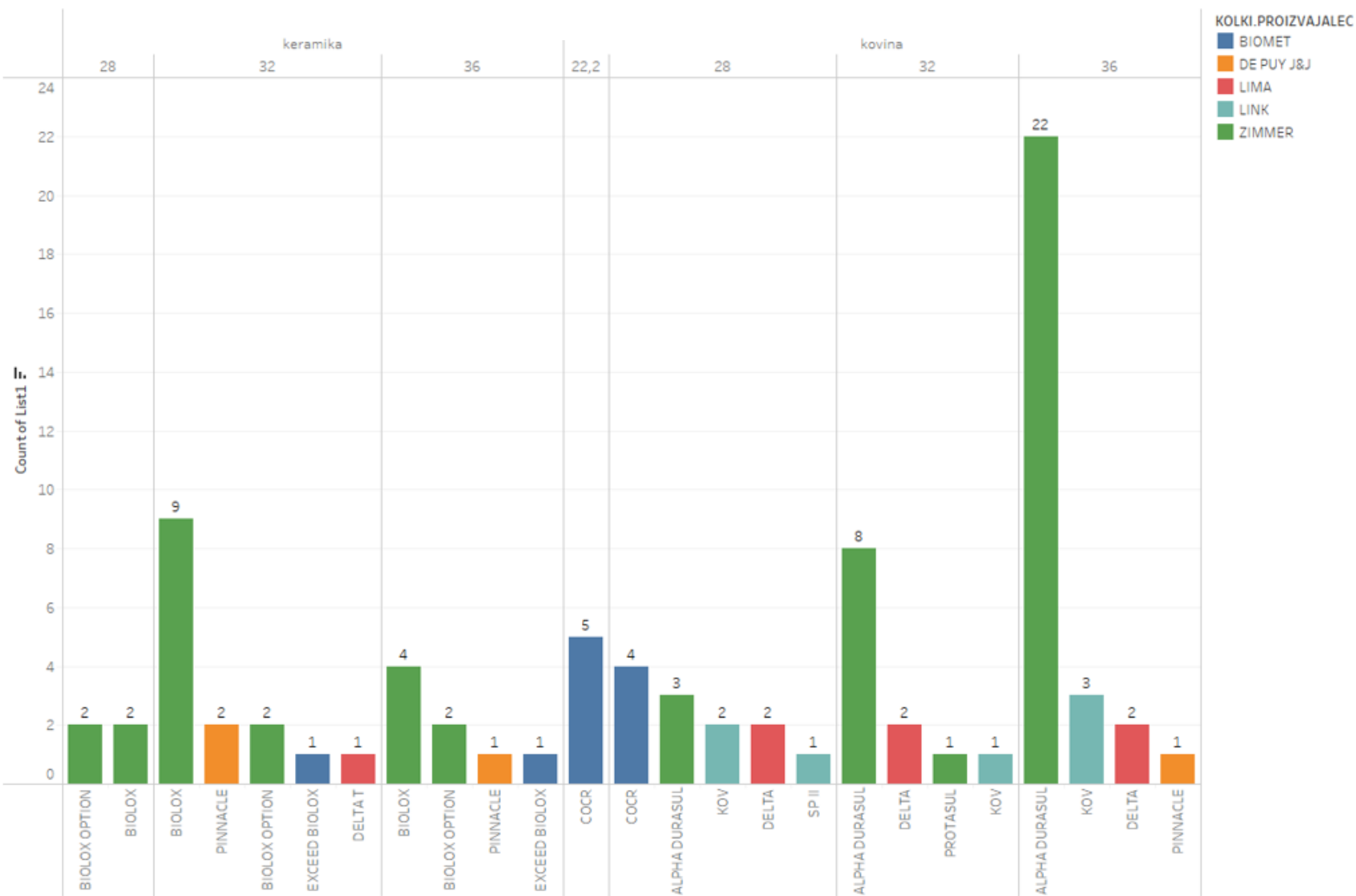
Material of the inlay



Heads used at revisions 2021, sum 84



Register artroplastike
Valdoltra



Revision burden for Valdoltra 2002- 2021

Year	RB (revision burden) = N° of revisions*100/(N° of primaries+ N° of revisions) in %	N° of revisions for infection*100 / (N° of primaries+ N° of revisions) in %
2002	10,91	1,20
2003	12,66	0,63
2004	11,48	0,66
2005	11,14	0,67
2006	11,75	1,17
2007	11,68	1,79
2008	11,60	1,21
2009	13,59	1,79
2010	12,91	1,55
2011	13,17	1,51
2012	13,74	2,15
2013	13,06	1,01
2014	12,00	2,08
2015	12,98	1,98
2016	15,21	2,60
2017	10,09	0,91
2018	9,97	1,72
2019	8,42	0,98
2020	8,15	0,87
2021	5,61	1,64
Average Valdoltra	11,52 %	1,41 %
2022 AONJRR Report (data 2021)	10,44 %	2,37 %
SAR 2021 (Švedska, data 2020)	9,38 %	1,19 %



Register artroplastike
Valdoltra

Cumulative percent of revisions –STEMS in THA (N>20)*: 02-21

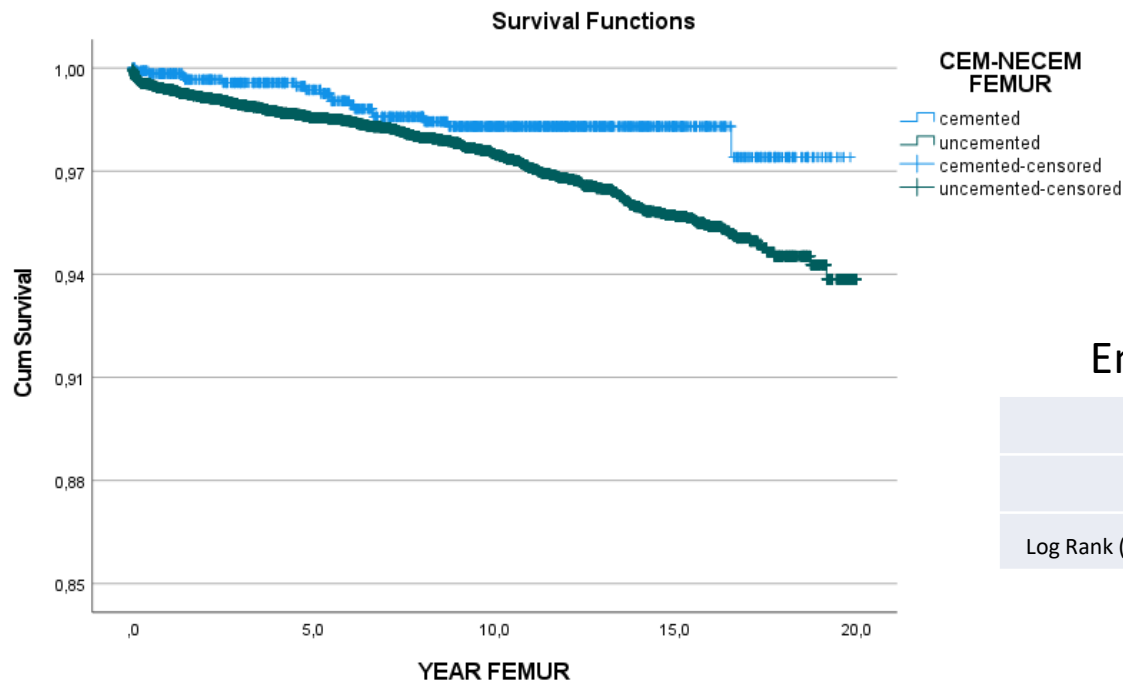
FEMORALNI DEL	ŠT. PRIM	REVIZIJE	STAROST	SPOL m/ž	1 year	5 years	10 years	15 years
AHS-WRIGHT	85	2	80 (71-90)	24/76	0 (0 - 0)	1,36 (-1,28 - 4,00)	2,87 (-1,06 - 6,81)	
ALLOCLASSIC-ZIMMER	6165	76	66 (14-93)	46/54	0,78 (0,56 - 1,01)	1,17 (0,89 - 1,45)	1,56 (1,17 - 1,96)	1,83 (1,29 - 2,39)
ALTO APC-BIOMET	113	0	77 (66-87)	11/89	0 (0 - 0)	0 (0 - 0)	0 (0 - 0)	0 (0 - 0)
ANCA-WRIGHT	33	2	49 (32-65)	33/67	3,03 (-2,81 - 8,87)	3,03 (-2,81 - 8,87)	3,03 (-2,81 - 8,87)	6,26 (-2,14 - 14,6)
BASIS CL-S&N	43	3	81 (75-94)	26/74	0 (0 - 0)	3,12 (-2,90 - 9,15)	10,5 (-0,83 - 21,9)	
C2-LIMA	277	10	64 (25-88)	44/56	1,45 (0,04 - 2,87)	2,18 (0,46 - 3,92)	4,11 (1,54 - 6,69)	
CBH-MATHYS	550	16	68 (33-94)	47/53	1,02 (0,13 - 1,92)	2,19 (0,84 - 3,53)	5,88 (2,09 - 9,67)	
CFP-LINK	69	3	64 (34-79)	65/35	4,39 (-0,46 - 9,25)	4,39 (-0,46 - 9,25)	4,39 (-0,46 - 9,25)	4,39 (-0,46 - 9,25)
CONSERVE-WRIGHT	44	0	53 (33-69)	98/2	0 (0 - 0)	0 (0 - 0)	0 (0 - 0)	
CORAIL-DE PUY J&J	2593	18	63 (15-91)	50/50	0,40 (0,14 - 0,66)	0,54 (0,21 - 0,87)	1,64 (0,61 - 2,68)	2,49 (0,93 - 4,05)
ELITE PLUS-DE PUY J&J	78	2	76 (49-88)	18/82	0 (0 - 0)	1,94 (-1,82 - 5,71)	1,94 (-1,82 - 5,71)	
EXCEPTION-BIOMET	171	3	67 (33-84)	43/57	0,59 (-0,56 - 1,74)	1,82 (-0,22 - 3,88)		
FITMORE-ZIMMER	190	5	65 (36-83)	61/39	2,11 (0,06 - 4,15)	2,64 (0,36 - 4,93)		
H MAX-LIMA	421	4	70 (24-90)	40/60	0,78 (-0,09 - 1,67)	1,27 (-0,02 - 2,57)		
PROFEMUR Z-WRIGHT	1100	70	62 (27-89)	43/57	1,91 (1,1 - 2,73)	3,04 (2,02 - 4,06)	5,08 (3,75 - 6,42)	8,12 (6,01 - 10,2)
REBRSTA-LINK	131	5	59 (33-77)	43/57	0,76 (-0,72 - 2,25)	1,53 (-0,57 - 3,64)	3,91 (0,55 - 7,27)	3,91 (0,55 - 7,27)
SL-PLUS-S&N (ENDOPLUS)	2658	128	66 (26-88)	39/61	0,87 (0,52 - 1,22)	1,89 (1,37 - 2,42)	3,75 (2,99 - 4,51)	5,83 (4,78 - 6,88)
SP II-LINK	781	5	78 (23-92)	22/78	0,27 (-0,10 - 0,65)	0,44 (-0,06 - 0,95)	0,64 (0,01 - 1,27)	0,64 (0,01 - 1,27)
TAPERLOC BC-BIOMET	66	0	70 (46-83)	32/68	0 (0 - 0)	0 (0 - 0)	0 (0 - 0)	
TAPERLOC MICRO-BIOMET	656	4	65 (33-89)	45/55	0,67 (0,02 - 1,33)	0,67 (0,02 - 1,33)		
TRI LOCK-DE PUY J&J	233	3	65 (30-95)	54/46	0,43 (-0,41 - 1,29)			
UNIBIONIX COPF-UNIOR (CHENDO)	127	6	66 (45-79)	65/35	2,65 (-0,30 - 5,62)	5,44 (1,2 - 9,67)	5,44 (1,2 - 9,67)	5,44 (1,2 - 9,67)
VARIAL-ZIMMER	164	4	59 (28-80)	52/47	0 (0 - 0)	0 (0 - 0)	0,63 (-0,60 - 1,86)	2,85 (0,09 - 5,61)
VERSYS-ZIMMER	1015	36	66 (33-87)	41/59	0,79 (0,25 - 1,34)	1,83 (0,99 - 2,67)	2,90 (1,82 - 3,98)	4,08 (2,69 - 5,47)
VERSYS FM-ZIMMER	68	1	61 (29-76)	49/51	0 (0 - 0)	0 (0 - 0)	1,69 (-1,59 - 4,98)	1,69 (-1,59 - 4,98)

*(N>20): End of FU at N<20

Cumulative percent of revisions –ACETABULUM in THA (N>20)*: 02-21

ACETABULARNI DEL	ŠT. PRIM	REVIZIJE	STAROST	SPOL m/ž	1 year	5 years	10 years	15 years
A CEM-LIMA	310	19	76 (43-89)	24/76	0,33(-0,3 - 0,97)	1,49(0,03 - 2,94)	6,07(2,79 - 9,35)	10,1(4,57 - 15,6)
ALLOFIT-ZIMMER	7911	79	67 (15-93)	45/55	0,63(0,45 - 0,81)	0,94(0,71 - 1,18)	1,24(0,94 - 1,53)	1,59(0,95 - 2,22)
ALLOFIT IT-ZIMMER	267	0	51 (14-76)	59/41	0(0 - 0)	0(0 - 0)		
ANCA-WRIGHT	53	1	54 (32-66)	55/45	1,88(-1,7 - 5,54)	1,88(-1,7 - 5,54)	1,88(-1,7 - 5,54)	1,88(-1,7 - 5,54)
APOLLO-BIOMET	172	5	75 (27-87)	18/82	0(0 - 0)	1,31(-0,4 - 3,11)	2,16(-0,2 - 4,60)	3,29(0,02 - 6,57)
CEM-SURGIVAL	100	2	77 (64-87)	24/76	1,01(-0,9 - 2,99)	2,10(-0,7 - 5,00)	2,10(-0,7 - 5,00)	
CFP-LINK	425	24	66 (34-85)	37/63	0,71(-0,0 - 1,52)	1,46(0,30 - 2,62)	3,64(1,76 - 5,52)	6,61(3,86 - 9,37)
CONSERVE-WRIGHT	47	0	52 (33-69)	95/5	0(0 - 0)	0(0 - 0)	0(0 - 0)	
DELTA-LIMA	677	10	67 (25-90)	42/58	0,61(0,01 - 1,21)	0,81(0,09 - 1,52)	3,03(0,92 - 5,14)	
DOETS-S&N (ENDOPLUS)	512	75	69 (46-83)	41/59	0,58(-0,0 - 1,25)	3,93(2,19 - 5,66)	11,8(8,81 - 14,9)	18,1(14,2 - 21,9)
DURALOC-DE PUY J&J	394	10	65 (38-82)	41/59	0,25(-0,2 - 0,75)	0,78(-0,0 - 1,66)	2,65(0,93 - 4,36)	2,98(1,15 - 4,80)
DURASUL CEM-ZIMMER	71	2	70 (23-90)	27/73	1,45(-1,3 - 4,30)	1,45(-1,3 - 4,30)	4,85(-2,2 - 11,9)	
EHS E-WRIGHT	318	39	62 (31-83)	48/52	0(0 - 0)	2,91(1,03 - 4,78)	9,91(6,48 - 13,3)	13,9(9,75 - 18,2)
EXCEED ABT-BIOMET	157	1	67 (33-84)	41/59	0,63(-0,6 - 1,88)	0,63(-0,6 - 1,88)		
G7-BIOMET	55	0	64 (44-81)	55/45	0(0 - 0)	0(0 - 0)		
IP-LINK	347	3	79 (35-92)	20/80	0,59(-0,2 - 1,42)	0,93(-0,1 - 1,98)	0,93(-0,1 - 1,98)	
ISOEL-MATHYS	61	5	63 (39-82)	30/70	1,65(-1,5 - 4,86)	5,02(-0,5 - 10,5)	7,02(0,35 - 13,7)	9,68(1,41 - 17,9)
MALLORY-BIOMET	51	1	70 (50-80)	37/63	1,98(-1,8 - 5,82)	1,98(-1,8 - 5,82)	1,98(-1,8 - 5,82)	
MPF-S&N (ENDOPLUS)	212	11	68 (46-85)	32/68	1,41(-0,1 - 3,01)	1,41(-0,1 - 3,01)	4,21(1,34 - 7,08)	7,87(2,73 - 13,0)
MULLER II-S&N	42	2	81 (73-94)	21/79	0(0 - 0)	3,12(-2,9 - 9,15)	6,71(-2,3 - 15,7)	
PINNACLE-DE PUY J&J	2567	7	63 (15-95)	51/48	0,13(-0,0 - 0,31)	0,29(0,00 - 0,58)	0,29(0,00 - 0,58)	
PROCOTYL L-WRIGHT	144	2	56 (28-79)	65/35	1,38(-0,5 - 3,30)	1,38(-0,5 - 3,30)	1,38(-0,5 - 3,30)	
RM PRESSFIT-MATHYS	390	12	71 (33-94)	37/63	0,62(-0,2 - 1,48)	1,73(0,21 - 3,24)	6,53(2,52 - 10,5)	
SELEXYS PC-MATHYS	53	0	63 (43-83)	77/23	0(0 - 0)	0(0 - 0)		
SELEXYS TPS-MATHYS	75	0	67 (47-86)	48/52	0(0 - 0)	0(0 - 0)		
SPH-LIMA	45	1	55 (26-67)	38/62	0(0 - 0)	2,29(-2,1 - 6,75)	2,29(-2,1 - 6,75)	2,29(-2,1 - 6,75)
TRILOGY-ZIMMER	1408	35	67 (36-87)	44/56	0,28(0,01 - 0,56)	0,51(0,13 - 0,89)	1,52(0,84 - 2,20)	3,29(2,14 - 4,46)
TRILOGY AB-ZIMMER	324	17	55 (27-75)	56/44	1,54(0,20 - 2,89)	1,86(0,39 - 3,34)	4,15(1,94 - 6,36)	5,57(2,99 - 8,15)
ULTIMA-DE PUY J&J	61	1	76 (34-88)	18/82	0(0 - 0)	0(0 - 0)	3,17(-2,9 - 9,29)	3,17(-2,9 - 9,29)
ZM-S&N (ENDOPLUS)	647	47	64(30-84)	31/69	1,40(0,49 - 2,31)	2,70(1,43 - 3,97)	5,07(3,29 - 6,85)	8,02(5,67 - 10,3)

Survival of cemented/uncemented femoral stems



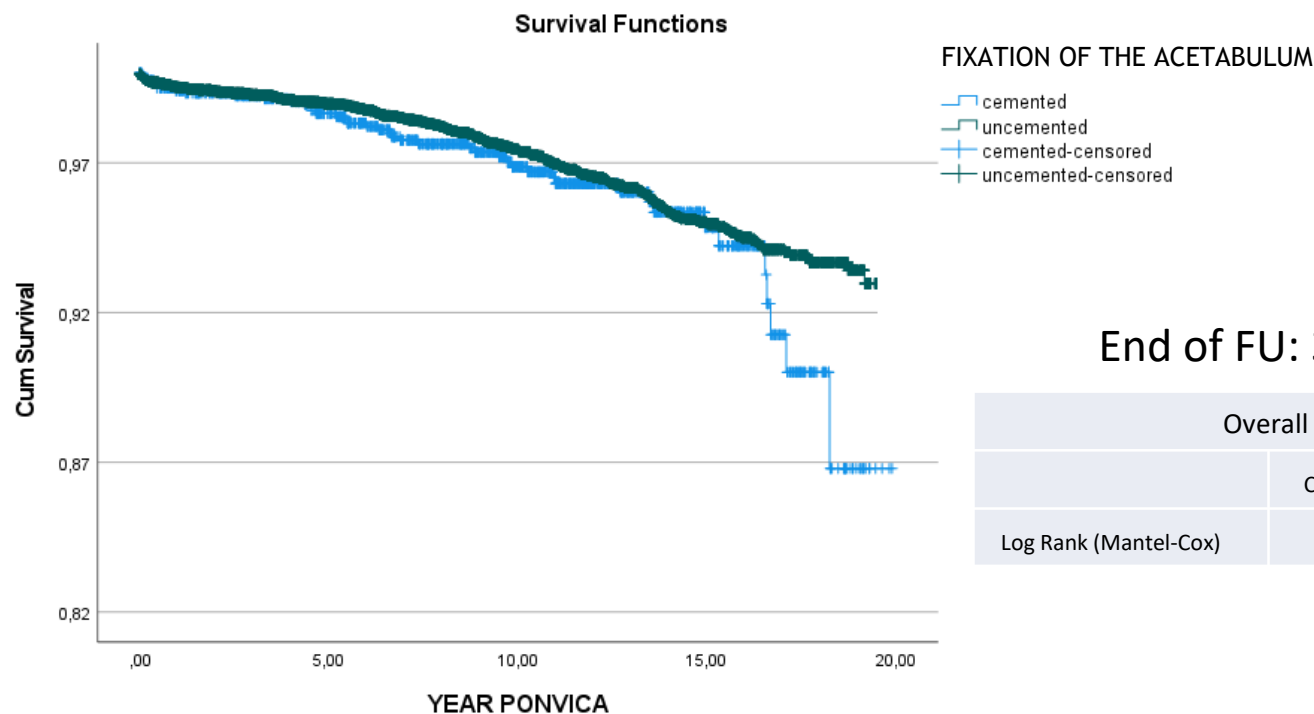
End of FU: 31.12.2021

Overall Comparisons			
	Chi-Square	df	Sig.
Log Rank (Mantel-Cox)	7.439	1	0.006

cemented: after **19,5** y observed survival is **97,4** (95 % CI = 95,4 % - 99,4 %)

uncemented: after **19,4** y observed survival is **93,9** (95 % CI = 92,7 % - 95,1 %)

Preživetje cementiranih in necementiranih ponvic

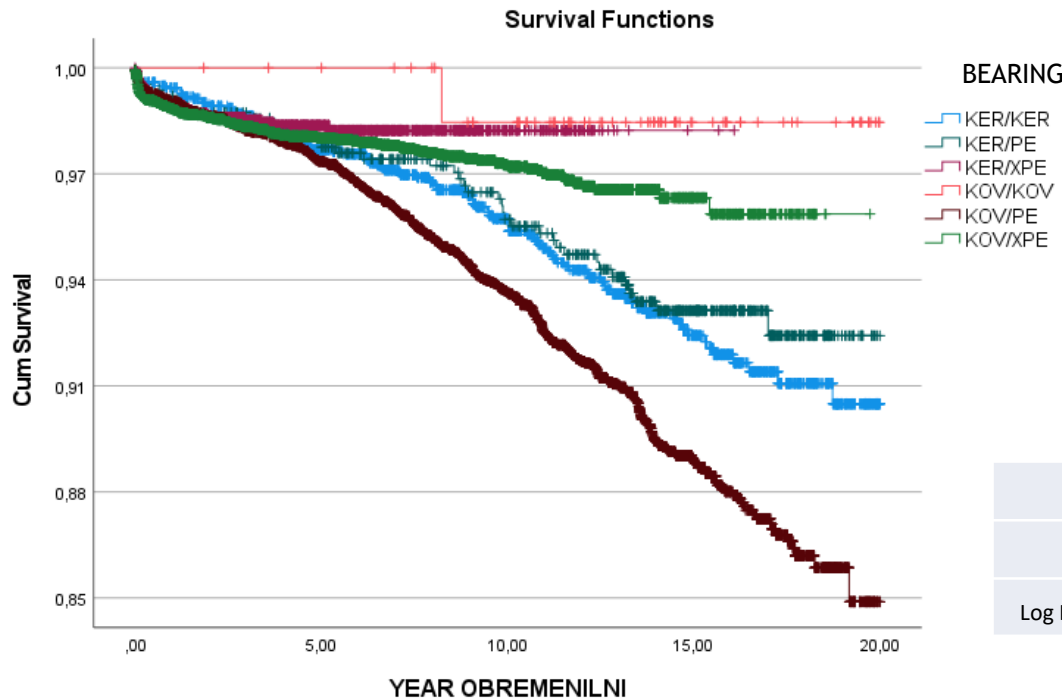


End of FU: 31.12.2021

Overall Comparisons			
	Chi-Square	df	Sig.
Log Rank (Mantel-Cox)	1.664	1	0.197

- **uncemented**: after **19,4** y observed survival is **93,0** (95 % CI = 91,6 % - 94,4 %)
- **cemented**: after **19,1** y observed survival is **86,8** (95 % CI = 79,2 % - 94,4%)

Survival of different bearings 02-21



End of FU: 31.12.2021

Overall Comparisons			
	Chi-Square	df	Sig.
Log Rank (Mantel-Cox)	90,947	5	< ,001

CER/XPE: after **15,8** y observed survival is **98,2 %** (95 % CI = 97,6 % - 98,8 %)

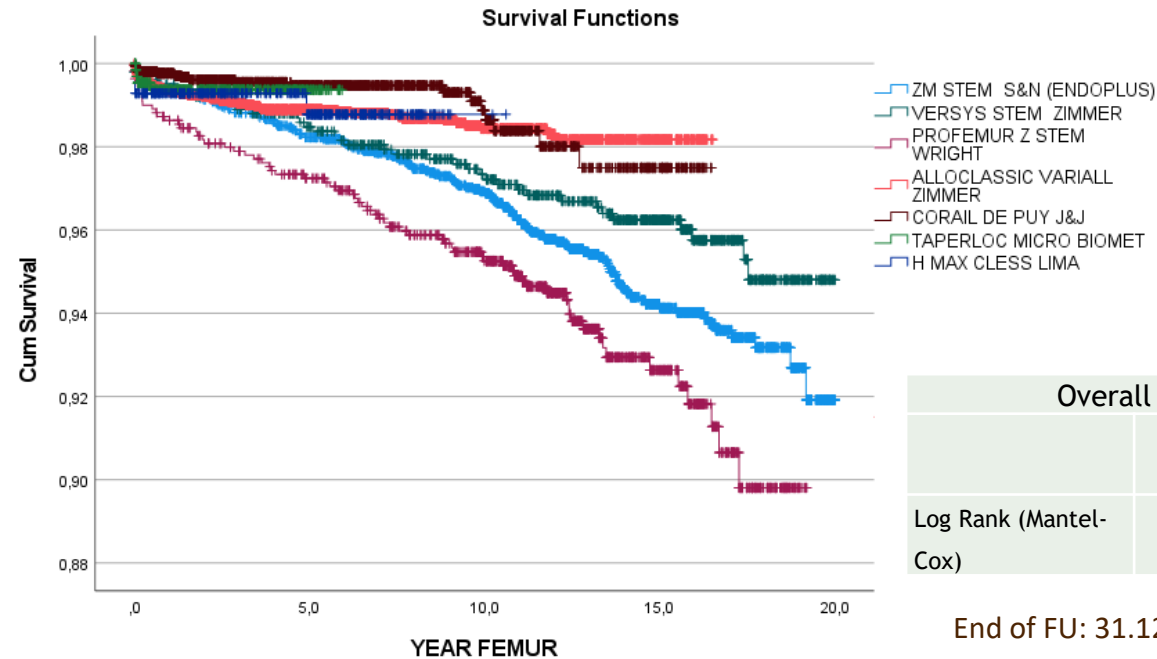
MO/XPE: after **19,2** y observed survival is **95,9 %** (95 % CI = 94,7 % - 97,1 %)

MO/PE: after **19,1** y observed survival is **92,4 %** (95 % CI = 89,9 % - 94,9 %)

CER/CER: after **19,0** y observed survival is **90,5 %** (95 % CI = 88,3 % - 92,7 %)

MO/PE: after **18,6** y observed survival is **84,9** (95 % IZ = 82,4 % - 87,4 %)

Survival of the 7 most common femoral stems 02-21



Overall Comparisons

	Chi-Square	df	Sig.
Log Rank (Mantel-Cox)	66,446	6	<0.001

Taperloc Micro Biomet: after 5,9 y observed survival is **99,4 %** (95 % IZ = 98,8 % - 100,0 %)

H Max CLESS Lima: after 10,5 y observed survival is **98,8 %** (95 % IZ = 97,4 % - 100,2 %)

Alloclassic Zmmer: after 16,3 y observed survival is **98,2 %** (95 % IZ = 97,6 % - 98,8 %)

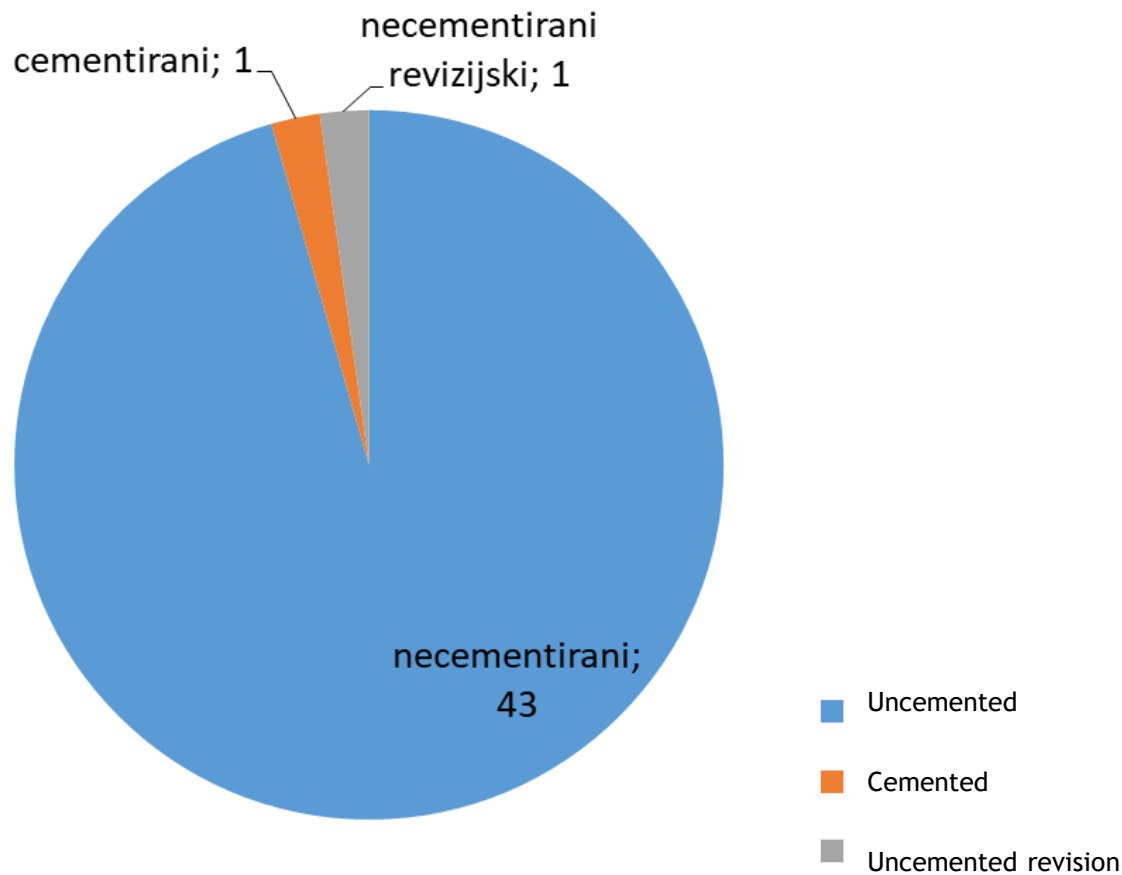
Corail DePuy: after 16,3 y observed survival is **97,5 %** (95 % IZ = 95,9 % - 99,1 %)

Versys Zimmer: after 19,4 y observed survival is **94,8 %** (95 % IZ = 92,8 % - 96,8 %)

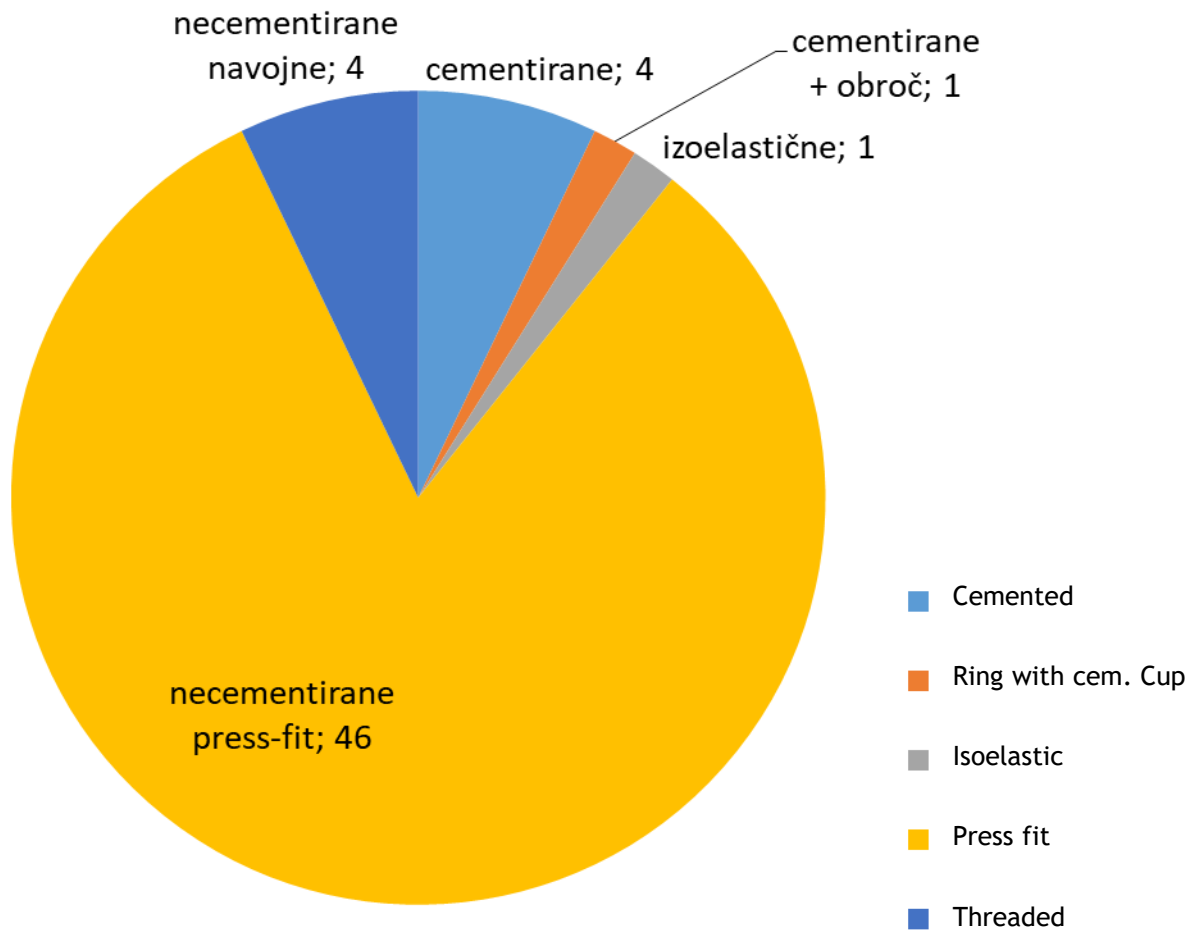
SL-Plus (ZM Endoplus): after 19,2 y observed survival is **91,9 %** (95 % IZ = 89,7 % - 94,1 %)

Profemur Z Wright: after 18,2 y observed survival is **89,8 %** (95 % IZ = 86,7 % - 92,9 %)

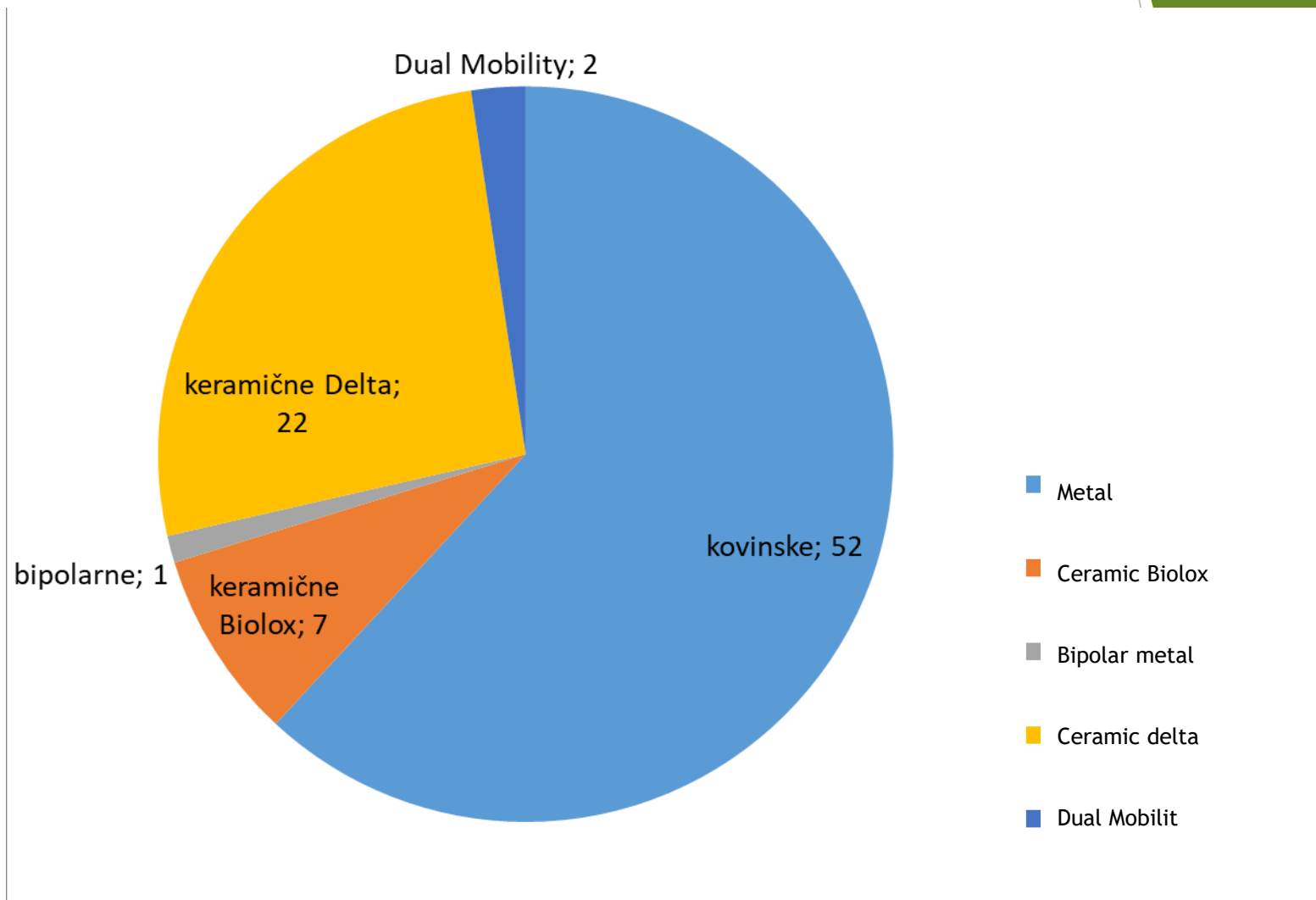
Removed and collected femoral components in 2021 (N° 45)

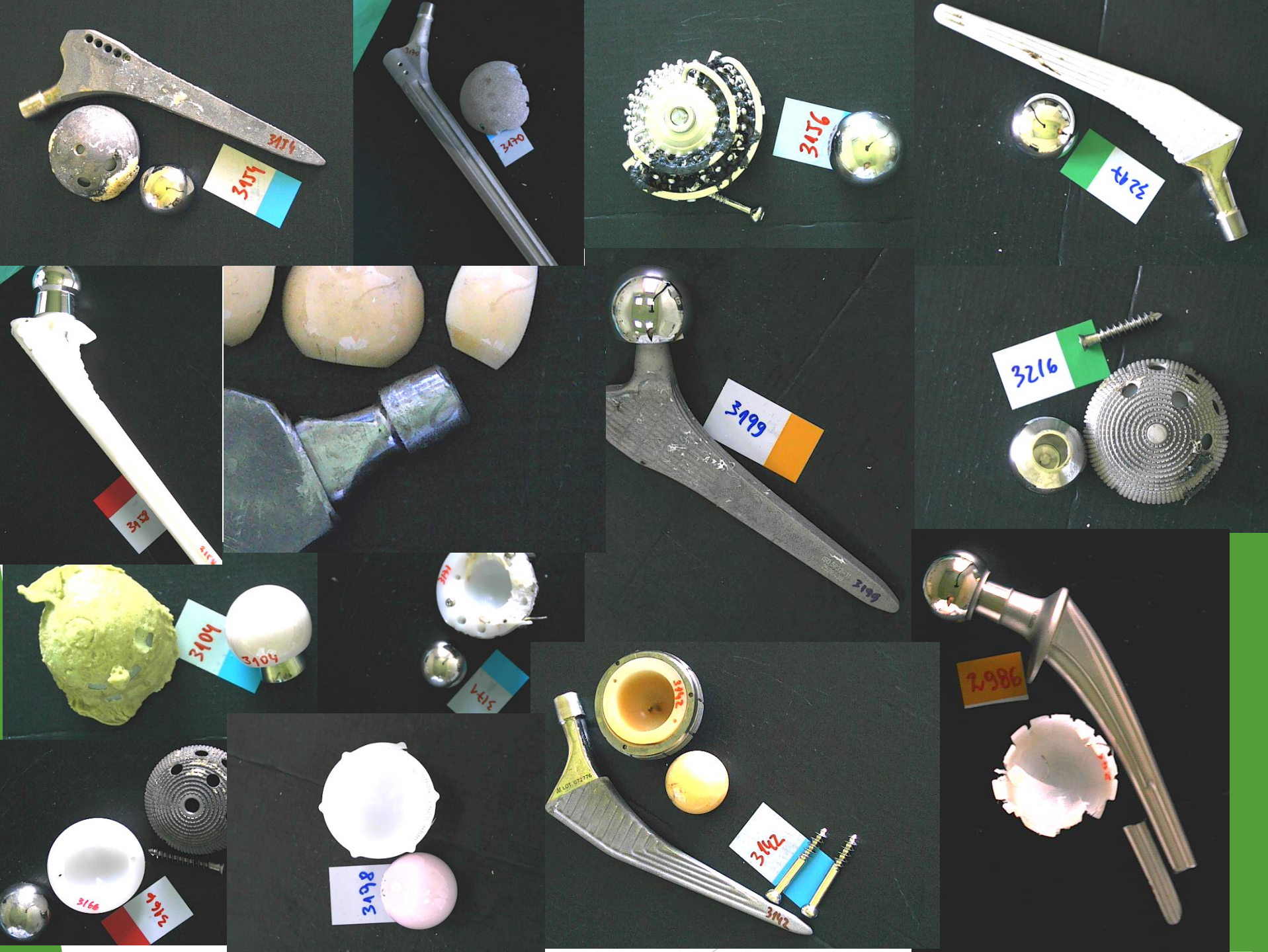


Removed and collected acetabular components: cemented, threaded and press-fit in 2021 (N° 56)



Removed and collected head components in 2021 (N° 84)





Removed stems – time in situ 2009-2021 (collected)

Charnley-Mueller stem (N° 59) (2009-2018)	23,5 ± 7,0 y (10,8 – 41,1)
isoelasticstem (N° 174) (2009-2021)	16,2 ± 5,0 y (5,1 – 30,8)
staight SL cem. stem (N° 68) (2009-2019)	13,0 ± 6,5 y (0,5 – 36,4)
SL-Plus ZM stem (N° 174) (2009-2021)	9,8 ± 5,8 y (0 – 27,4)
Profemur stem (N° 75) (2009-2021)	7,2 ± 4,8 y (0,1 – 17,5)

„The longest time in situ“

Smith-Petersen



Profemur Z



rev. SL-Plus



Isoelastic



SL Lima



ALIVIUM ChM



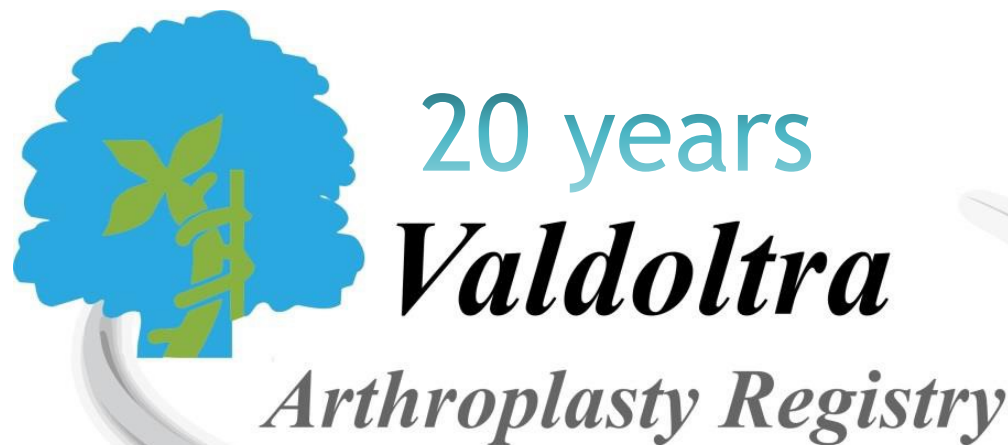
Judet



leta

Cemented Link





Citation:

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